

# Emerging Oral Cancers, HPV and HIV



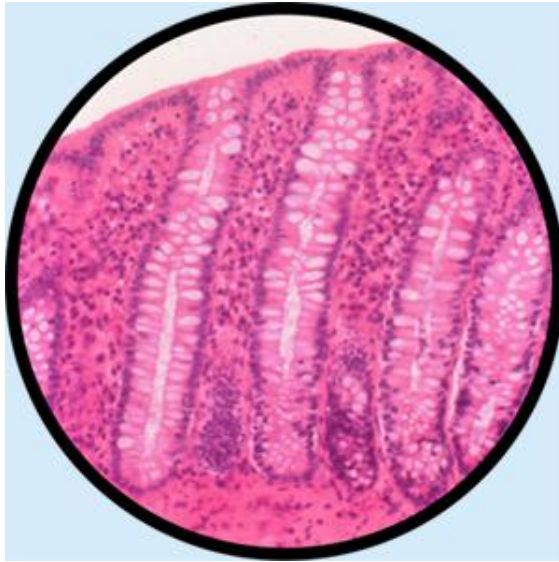
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# Overview

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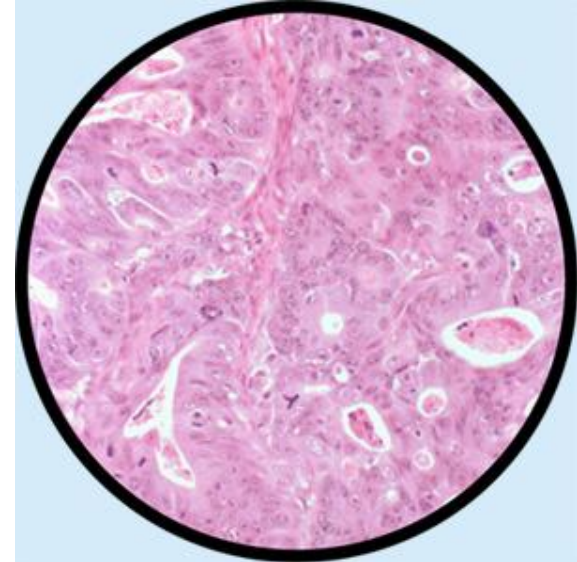
- Incidence of Oral Cancer
- Risk factors (Tobacco, alcohol, HPV& HIV)
- Screening
- Treatment options

# Normal Cells vs. Cancer Cells



## *Healthy cells*

- **Grows with control**
- **Regularly dies**
- **Specific function**
- **Organized**



## *Cancer cells*

- **Grows without control**
- **Doesn't self-destruct**
- **Can spread**

# Cancer can spread...

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1. Through neighboring tissue.
2. Through the lymphatic system.
3. Through the blood system.

# The Problem

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## Oral/Pharyngeal/Head and Neck Cancer

- 40,250 newly diagnosed in USA
- 7,850 men and women died of oral and pharyngeal cancer in 2012
- 4.5% of all new cancer cases—ORAL



- 61% 5-year survival for all stages combined

# Oral Cancer is a global disease

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- **10<sup>th</sup> most common cancer worldwide (WHO)**
- **Tobacco use rampant in many countries**
- **Lack of education creates more problems**
- **Treatment expense is a heavy burden**



# Risk Factors

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- Tobacco (90%)
- Alcohol
- Sun exposure – lip
- Diet
- Human Papilloma Virus (HPV) (**on the rise**)



# More Risk Factors for Oral Cancer

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- Men are twice as likely to develop oral cancers.
- Men are more likely to use tobacco and alcohol over long periods of time and in large enough doses to cause these cancers.
- Increases with age



# World Tobacco Use

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**WHO- estimates 1.3 billion smokers in the world (1/3 global population)**



- Most common cancer in the world among men is *lung* cancer
- Leading cause of cancer death in men is *lung*
- 4th leading cause of cancer death in women worldwide is *lung*.
- ***90% of all oral cancers are tobacco related***



# Lung Cancer

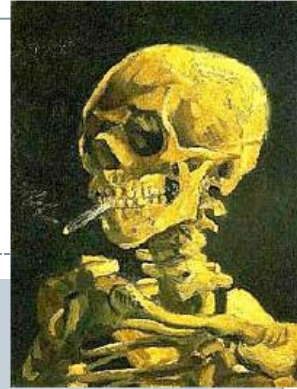
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- 1 out of 3 smokers will die from smoking!
- Second-hand smoke accounts for 10% of all tobacco-related deaths.

# Chemicals in Cigarettes

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- Ammonia  
(toilet cleaner)



- Acetone  
(nail polish remover)



- Arsenic  
(rat poison)



- Nicotine  
(tranquilizer darts,  
pesticide)



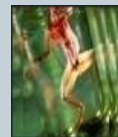
- Cadmium  
(batteries)



- Benzene  
(explosives, pesticides)



- Cresol  
(Lysol household cleaner)



- Formaldehyde  
(preserves dead bodies)

# Six Trillion a Year

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“Worldwide, 47 percent of men and 12 percent of women smoke a total of **6 trillion cigarettes a year.** (World Health Organization, 1999).”

# Two types of Oral Cancer

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1. Oral cavity cancer
2. Oropharyngeal cancer

# Location of cancers

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Most oral cancers begin on the

1. Tongue or
2. The floor of the mouth

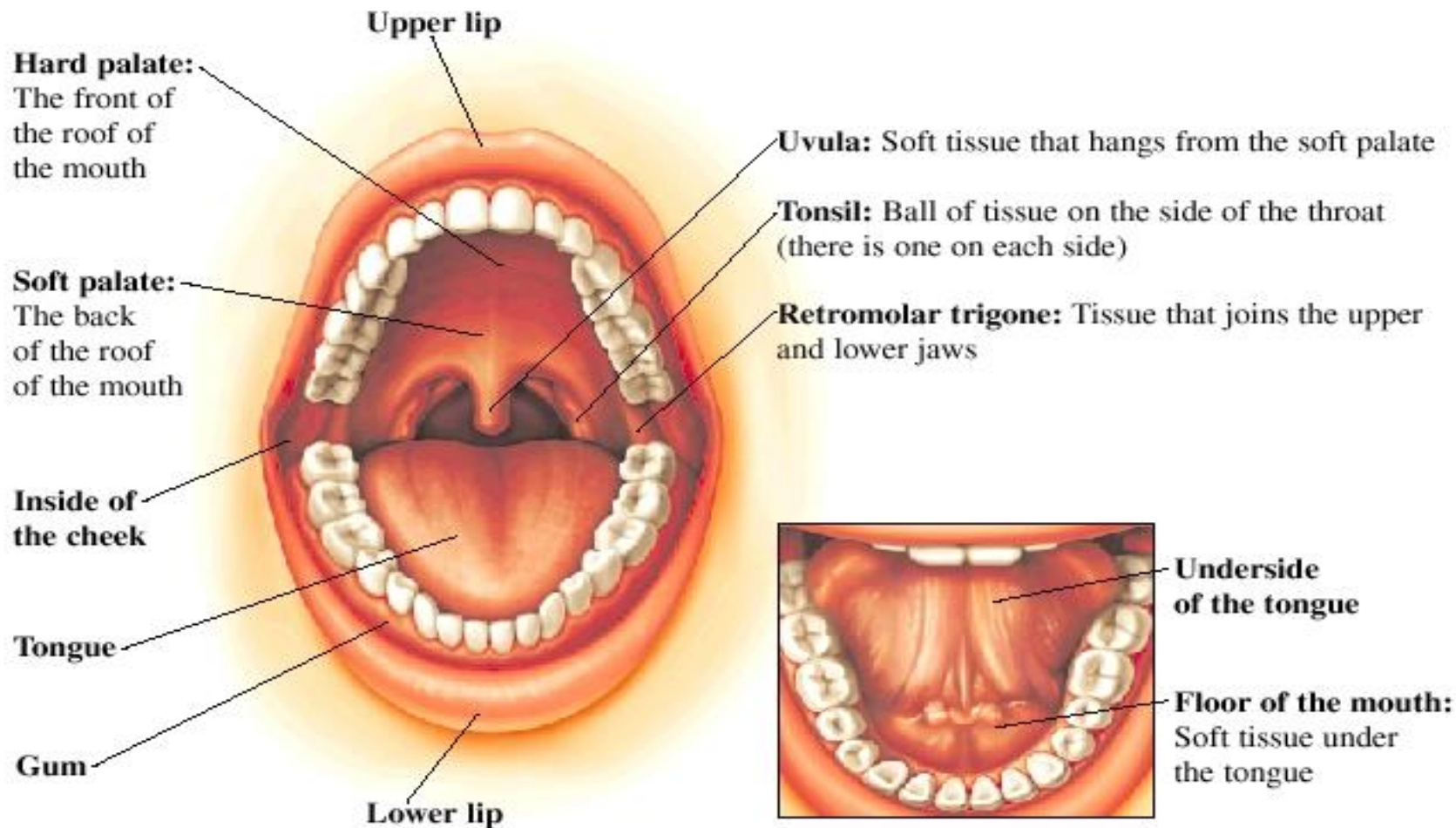
- 90% of cancers of the oral cavity and oropharynx are squamous cell carcinomas.

If you are a clinician keep your eyes open!



# Oral Cavity

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# Oropharynx

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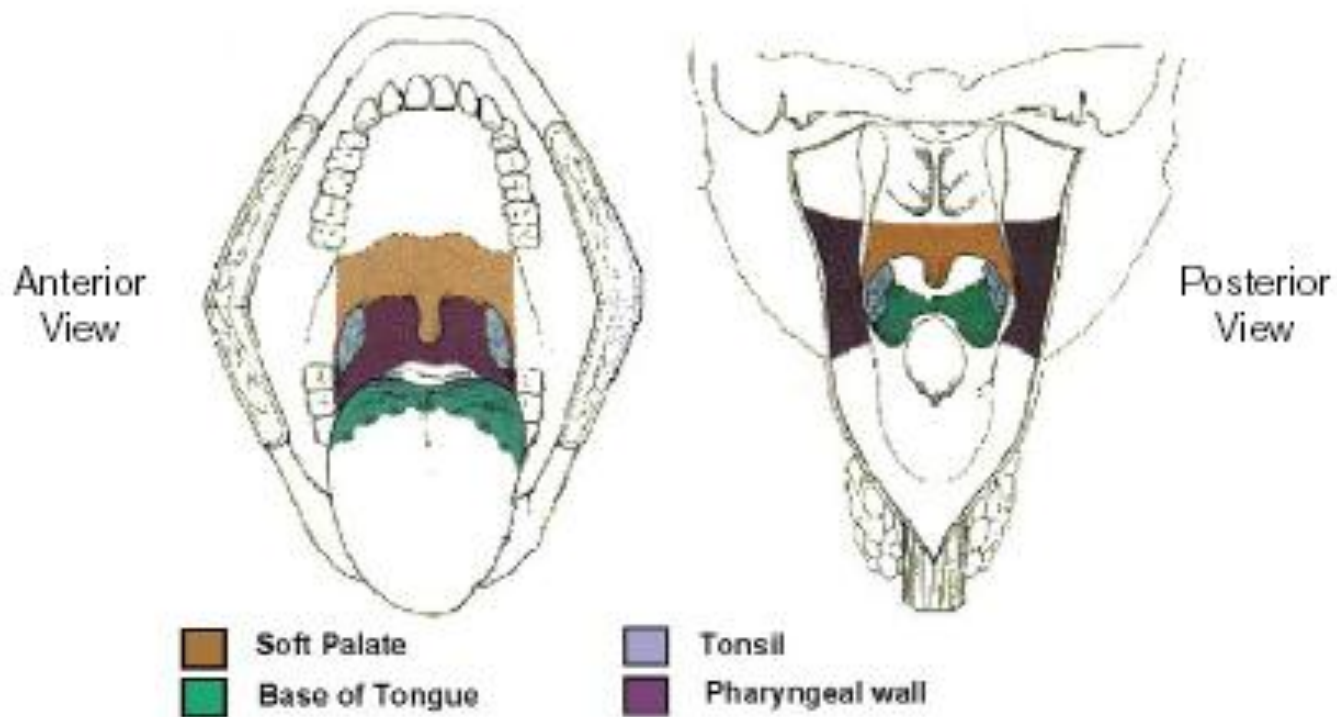


Figure 6-1. The anatomical boundaries of the oropharynx.



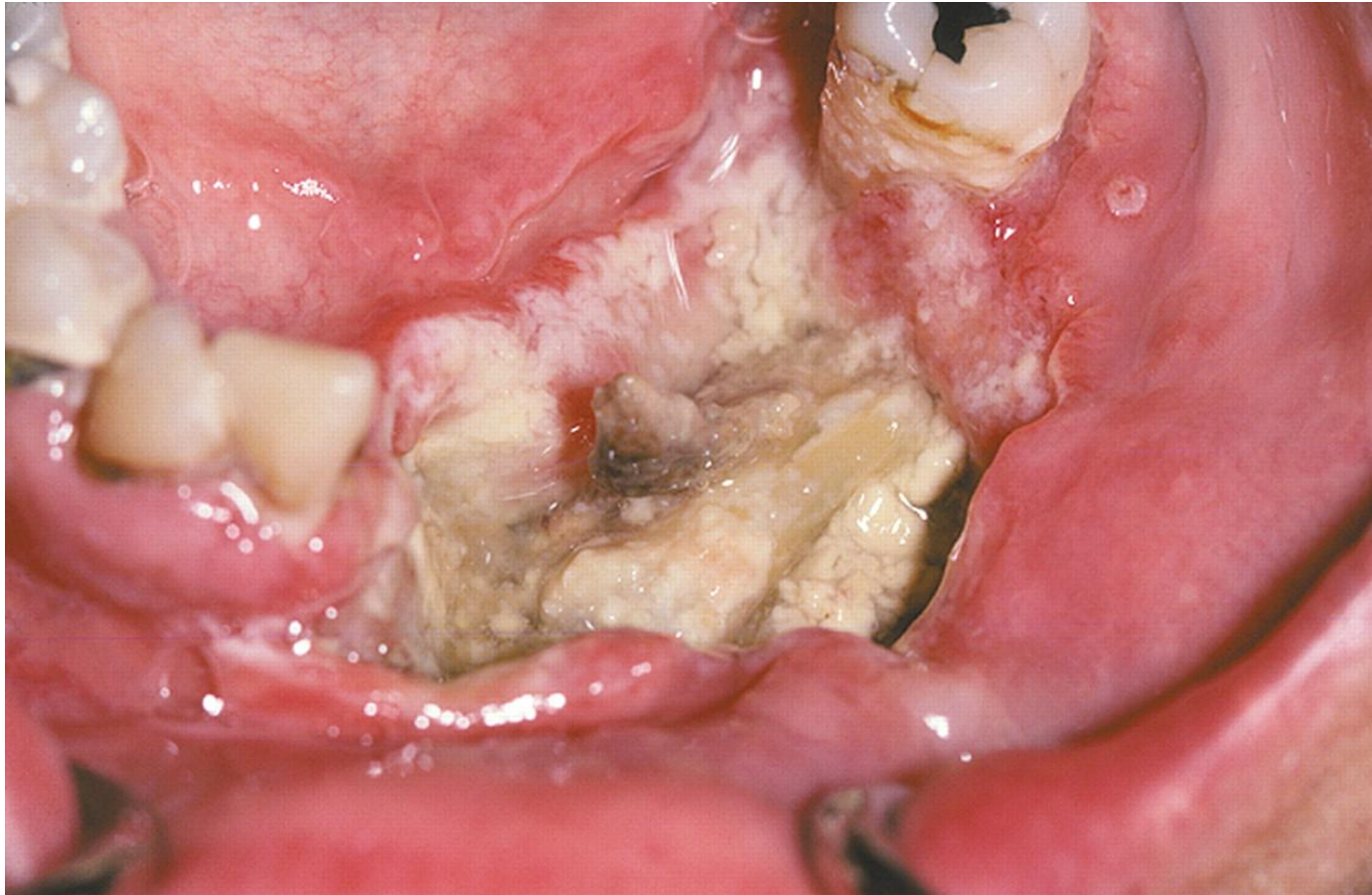
# Oral Cancer

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The tongue is  
one of the most  
common sites.

# Squamous Cell Carcinoma



From Neville, B. W. et al. CA Cancer J Clin 2002;52:195-215.

1,700+ new cases of HPV are associated with head and neck cancers in **women**

Approximately 5,700 **men** are diagnosed each year in the United States.



## HPV (Human Papilloma Virus) Connection

# Oral HPV connection

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- The majority of oral cancers are primarily squamous cell carcinomas, much like the cancer that affect the cervix.
- Considered a sexually transmitted disease
- 30-35% of Oral Cancers are HPV related and **this percentage is rising.**
- HPV is so common that at least 50% of sexually active men and women get it at some point in their lives.

# p53 gene (the good gene)

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- Regulates the cell cycle (repairs DNA )
- Stops the formation of tumors



# P53 Gene and Oral Cancer/HPV

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- Oral Cancers that are HPV (–) (tobacco/alcohol related) have mutated P53 gene.
- More aggressive HPV (+) tumors seem to be void of a p53 mutation.
- Survival outcomes may be better/longer if HPV (+)

# Interferes with p53

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Alcohol and carcinogens in tobacco contribute to mutation of p53 gene.



# Preventive measures of Oral HPV

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## HPV Vaccine

- Gardasil & Cervarix
- These vaccines prevent HPV that cause 70% of all cervical and oropharyngeal cancers.

## Safe Sex

- Use protection EVERY time you have any type of sex
- Limit number of sexual partners
- See oral health professional *at least* once a year – to check mouth thoroughly



# Oral Cancer HIV Connection

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# AIDS related oral cancer manifestations

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- Immune system extremely suppressed
- Oral AIDS related cancer - may be first sign of late stage HIV/AIDS
- Can be very painful and patient may develop problems eating



# Two HIV Cancers

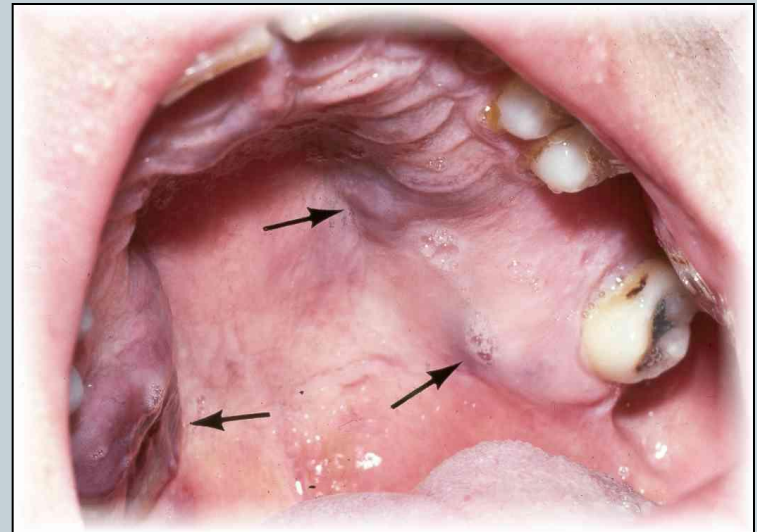
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## AIDS related Lymphoma

Hodgkin's and Non-Hodgkin's Lymphoma



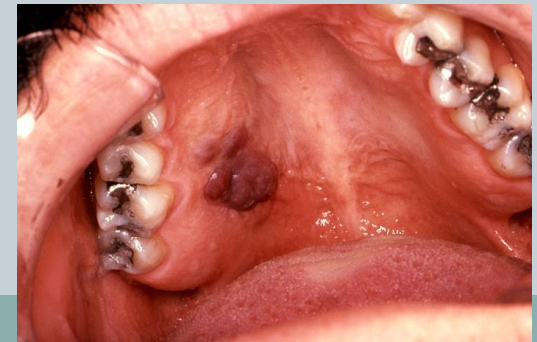
## Kaposi's Sarcoma



# Oral Kaposi's Sarcoma

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- May be first manifestation of late stage HIV
- More commonly observed in men
- Red, blue or purplish lesions
- Most commonly found on hard palate
- Immune system extremely suppressed
- Need biopsy to diagnose



# Treatment for Kaposi's Sarcoma

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- Surgical (early stage)
- Low-dose irradiation and intralesional chemotherapy
- Systemic chemotherapy
- Highly active antiretroviral (HAART) drugs



# AIDS related lymphoma

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- Can grow and spread quickly.
- Need biopsy to diagnose

# Treatment for AIDS related lymphoma

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- HAART therapy
- Chemotherapy, if they can tolerate it.
- For patients with primary CNS lymphoma, chemotherapy or whole-brain radiation may be used.



# Survival Rates of Oral Cancer

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## 5-year relative USA survival rates

- 82% for localized disease
  - 57% for regional involvement
  - 35% for distant metastasis
- 
- (3yr survival rate HPV+ 82% vs. HPV- at 57%)





# Early Detection Saves Lives

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*Early* diagnosis  
leads to better  
outcomes!

# The Oral Cancer Screening Exam

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What do you need:

- Motivation
- About **2-3** minutes
- Proper lighting
- Dental mirror
- **Gauze squares**
- Gloves



# The Cancer Screening Exam

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## Components of an Oral Cancer Screening Exam

- **Medical History** and Risk Factors



- Extraoral Examination

- **Inspect** the Head and Neck region
- **Palpate** Cervical Lymph Nodes and Salivary Gland

- Intraoral Examination

- **Inspect and palpate** the buccal mucosa, lip, alveolar ridge/gingiva, tongue, floor of mouth, hard/soft palate

# The Oral Cancer Exam

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- If pt has dentures (plates) or partials, remove them.
- Next, inspect the face, neck, lips and mouth to look for any signs of cancer.
- With both hands, feel the area under the jaw and the side of the neck, checking lymph nodes for lumps that may suggest cancer.
- **Look at and feel** the insides of lips and cheeks to check for possible signs of cancer, such as red and/or white patches.

# Oral Cancer Screening Continued

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- Next, check tongue so it can be checked for swelling or abnormal color or texture.
- **Using gauze**, gently pull tongue to one side, then the other, to check the base of tongue. Check underside of tongue too.
- *Look and feel* the roof and floor of the mouth, as well as the back of the throat. ***\*remember floor of mouth & tongue most common sites\****
- Finally, put one finger on the floor of your mouth and, with the other hand under the chin, gently press down to check for lumps or sensitivity.

# The Cancer Screening Exam

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## Symptoms of Oral Cancer

- Persistent pain or numbness
- Difficulty chewing, swallowing, speaking, or moving jaw or tongue
- Swelling of jaw
- Change in fit of denture
- Hoarseness
- Enlarging neck mass



# The Cancer Screening Exam

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## Signs of Oral Cancer

- Persistent velvety white, red or speckled patch
- Sore that won't heal or bleeds
- Hard, raised lesion
- Firm, non-tender, and/or non-mobile neck mass



~ **Rule of thumb** ~ **2 weeks!!!**

# The Cancer Screening Exam

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# Use Gauze – takes 30 seconds!



- Use Gauze – it is easier to hold the tongue
- Better view of back and side views of tongue



DHHS/NIH/NIDCR

# If suspicious, then biopsy

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**Suspicious lesions need a biopsy!**

- Incisional/excisional biopsy  
**It is best to biopsy if suspicious!**

# Treatment Options

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**TREATMENT IS MOST  
SUCCESSFUL WHEN A  
TEAM APPROACH IS  
TAKEN!**



# ***Early Cancers of the Oral cavity/Oropharynx***

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- Surgery with or without radiation therapy
- After surgery reconstruction necessary even in low stage lesions
- **Oropharynx rarely diagnosed early**
- Base of tongue primary tumors are generally offered non-surgical therapy



# ***Advanced Oral Cavity/ Oropharynx Cancer***

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- Commonly involve bony structures of the maxilla and mandible and will require complicated reconstruction
- Lymph nodes involved
- *Combined* radiation and chemotherapy
- Seldom able to use surgery
- Reconstruction *mandatory* following surgery



# Anterolateral Thigh Free Flap

- Example of tongue reconstruction
- Creating a tongue from the anterolateral thigh
- Donor site well tolerated



# Conclusions

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- Early identification improves outcomes of survival
- A team approach has better success when treating oral cancer patients
- **As a clinician you can make a difference by doing an oral cancer screening on every patient.**
  - **EDUCATE – EDUCATE –EDUCATE!!!**

# Thank you!

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Questions ???



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